

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (Currently Amended) A method of performing a cyclic redundancy check (CRC) calculation on a data stream composed of one or more segments of data, the method comprising:

~~providing-supplying the data stream, one data segment per cycle, to a multiple-byte cyclic redundancy check (CRC) circuits, at least one cyclic redundancy check circuit able comprising a plurality of CRC modules, wherein each of the CRC modules is configured to perform the cyclic redundancy check CRC calculation on a maximum amount different number of bytes of data during a single cycle and at least one cyclic redundancy check circuit able to perform the cyclic redundancy check calculation on a minimum amount of data, each cyclic redundancy check circuit capable of using prior cyclic redundancy check calculation results;~~

~~determining which one of the multiple cyclic redundancy check circuits is appropriate plurality of CRC modules should be used for the processing a segment of data to be processed currently supplied to the multiple-byte CRC circuit;~~

~~after said step of determining, processing the segment of data with using only the CRC module determined appropriate cyclic redundancy check circuit for the current segment of data, wherein said step of processing comprises performing the CRC calculation on the current segment of data to produce CRC calculation results for the current cycle; and~~

~~if more segments of data remain in the data stream, repeating the steps of determining which redundancy check circuit is appropriate and processing the segment of data with the appropriate cyclic redundancy check circuit until there are no more segments of data to process.~~

2. (Currently Amended) The method of claim 1, wherein the method of performing a cyclic redundancy check calculation on a data stream is used in an interface circuit board.

3. (Currently Amended) The method of claim 12, wherein the maximum amount of data number of bytes is eight bytes of data.

4. (Currently Amended) The method of claim 3, wherein the ~~multiple cyclic redundancy check circuits plurality of CRC modules~~ includes:

~~an eight byte-wide CRC module cyclic redundancy check circuit configured to perform a CRC calculation on an eight-byte-wide segment of data;~~

~~a seven byte-wide CRC module cyclic redundancy check circuit configured to perform a CRC calculation on a seven-byte-wide segment of data;~~

~~a six byte-wide CRC module cyclic redundancy check circuit configured to perform a CRC calculation on a six-byte-wide segment of data;~~

~~a five byte-wide CRC module cyclic redundancy check circuit configured to perform a CRC calculation on a five-byte-wide segment of data;~~

~~a four byte-wide CRC module cyclic redundancy check circuit configured to perform a CRC calculation on a four-byte-wide segment of data;~~

~~a three byte-wide CRC module cyclic redundancy check circuit configured to perform a CRC calculation on a three-byte-wide segment of data;~~

~~a two byte-wide CRC module cyclic redundancy check circuit configured to perform a CRC calculation on a two-byte-wide segment of data; and~~

~~a single byte-wide CRC module cyclic redundancy check circuit configured to perform a CRC calculation on a one-byte-wide segment of data.~~

5. (Currently Amended) The method of claim 1, wherein the ~~cyclic-redundancy-check-multiple-byte CRC circuit~~ uses a CRC-32 generator polynomial for ~~performing the cyclic-redundancy-check-CRC~~ calculation.

6. - 10. (Canceled)

11. (New) The method of claim 1, wherein at least one of the plurality of CRC modules is configured to perform the CRC calculation on a minimum number of bytes during a single cycle, and wherein the minimum number of bytes is substantially equal to one.

12. (New) The method of claim 11, wherein at least one of the plurality of CRC modules is configured to perform the CRC calculation on a maximum number of bytes during a single cycle, and wherein the maximum number of bytes is selected from a range of integer values encompassing eight.

13. (New) The method of claim 12, wherein each of the plurality of CRC modules is configured for using prior CRC calculation results from a previous cycle when performing a CRC calculation during a subsequent cycle.

14. (New) The method of claim 12, wherein said step of determining comprises selecting one of the plurality of CRC modules based on a number of bytes in the current segment of data.

15. (New) The method of claim 14, wherein if the current segment of data comprises a number of bytes, which is less than the maximum number of bytes:

said step of determining comprises selecting, from the plurality of CRC modules, a CRC module configured for performing the CRC calculation on the number of bytes in the current segment of data; and

said step of processing comprises using the selected CRC module to perform the CRC calculation on the current segment of data to produce final CRC calculation results.

16. (New) The method of claim 14, wherein if the current segment of data comprises more than the maximum number of bytes:

said step of determining comprises selecting the at least one CRC module configured for performing the CRC calculation on the maximum number of bytes;

said step of processing comprises using the selected CRC module to perform the CRC calculation on the current segment of data to produce CRC calculation results for the current cycle; and

wherein prior to said step of repeating, said method further comprises:

storing the CRC calculation results for the current cycle; and

ascertaining if a next segment of data will be supplied to the multiple-byte CRC circuit during a next cycle, and if so, whether the next segment of data comprises more than the maximum number of bytes.

17. (New) The method of claim 16, wherein if the method ascertains that a next segment of data is not supplied to the multiple-byte CRC circuit, the stored CRC calculation results are considered final CRC calculation results and the method ends.

18. (New) The method of claim 16, wherein if the method ascertains that a next segment of data is supplied to the multiple-byte CRC circuit and it comprises more than the maximum number of bytes:

said step of determining comprises selecting the at least one CRC module configured for performing the CRC calculation on the maximum number of bytes;

said step of processing comprises using the selected CRC module to perform the CRC calculation on the next segment of data and the stored CRC calculation results to produce CRC calculation results for the next cycle; and

said step of storing comprises replacing the stored CRC calculation results with the CRC calculation results for the next cycle.

19. (New) The method of claim 16, wherein if the method ascertains that a next segment of data is supplied to the multiple byte CRC circuit and it comprises a number of bytes, which is less than the maximum number of bytes:

said step of determining comprises selecting, from the plurality of CRC modules, a CRC module configured for performing the CRC calculation on the number of bytes in the next segment of data;

said step of processing comprises using the selected CRC module to perform the CRC calculation on the next segment of data and the stored CRC calculation results to produce CRC calculation results for the next cycle; and

said step of storing comprises replacing the stored CRC calculation results with the CRC calculation results for the next cycle.

20. (New) The method of claim 16, wherein if the method ascertains that a next segment of data is supplied to the multiple byte CRC circuit and it comprises a number of bytes, which is less than the maximum number of bytes:

said step of determining comprises selecting the at least one CRC module configured for performing the CRC calculation on the minimum number of bytes;

said step of processing comprises using the selected CRC module to perform the CRC calculation on a first byte of the next segment of data and the stored CRC calculation results to produce new CRC calculation results;

said step of storing comprises replacing the stored CRC calculation results with the new CRC calculation results; and

repeating the steps of processing and storing until no bytes remain in the next segment of data.